**ABBREVIATIONS** SYMBOL LEGEND SYMBOL LEGEND SYMBOL LEGEND SYMBOL LEGEND GENERAL NOTES NOM NOMINAL ARCHITECT / ENGINEER FCUC FAN COIL UNIT COOLING ONLY **ROLLER-TYPE HANGER** - DETAIL NUMBER 24. SEE ARCHITECTURAL DOCUMENTS FOR PAINTING OF ALL EXPOSED DUCTWORK, PIPING, PRESSURE DIFFERENTIAL TRANSMITTER DETAIL DESIGNATION NPLV NON-STANDARD PART LOAD VALUE AIR TO AIR HEAT EXCHANGER FCUH FAN COIL UNIT HEATING ONLY DRAWING NUMBER AIR OUTLET AND FIXTURE TRIM. PAINT FLAT BLACK THE INSIDE OF ALL DUCTWORK NPSH NET POSITIVE SUCTION HEAD AIR BLENDER FCW FORWARD CURVED WHEEL (FAN) VARIABLE SPRING-TYPE HANGER (TYPE 51)\* VISIBLE THROUGH DIFFUSERS, GRILLES, AND REGISTERS PRESSURE DIFFERENTIAL SWITCH NTS NOT TO SCALE FLOOR DRAIN AUTOMATIC AIR VENT STANDARD BRANCH SUPPLY OR AIR COOLED CONDENSE FIRE DAMPE OA OUTSIDE AIR SECTION LETTER SPRING CUSHION-TYPE HANGER (TYPE 48 OR 49)\* 25. INSTALL SHUT-OFF VALVES AT EACH BRANCH PIPE LINE. SECTION DESIGNATION RETURN, NO SPLITTER (45) TAP) HAND SWITCH (HAND-OFF-AUTO SWITCH **ACCH** AIR COOLED CHILLER FINAL FILTER OAG OUTSIDE AIR GRILLI **ACCU** FLUE GAS/FEEDWATER HEAT CLEVIS-TYPE HANGER AIR-COOLED CONDENSING UNIT OAL OUTSIDE AIR INTAK 26. UNLESS SPECIFICALLY SPECIFIED OR SHOWN OTHERWISE ALL CONSTRUCTION IS TO VALVE OR DAMPER POSITION CONTROLLER OD OUTSIDE DIAMETER AIR CONDITIONING UNIT **EXCHANGER** TRAPEZE HANGER (PROVIDE U-BOLT PIPE ATTACHMEN' CONFORM TO SMACNA HVAC CONSTRUCTION STANDARDS, TWO INCH PRESSURE BUILDING NO. WHERE EQUIPMENT IS LOCATED. AUTOMATIC CONTROL FLOW METER OFM OIL FLOWMETER CLASSIFICATION. TO TRAPEZE EXCEPT WHERE RH ARE INDICATED) FOP FUEL OIL PUMP OR OPERATING ROOM DAMPER, MODULATING **EQUIPMENT ABBREVIATION (SUPPLY FAN)** LOCAL RECORDING TIME CLOCK (RUNTIME FLOOR-SUPPORTED PIPE STAND FOT FUEL OIL TANK AUTOMATIC CONTROL PUMP REFER TO ARCHITECTURAL SPECIFICATION FOR APPROVED FIRESTOPPING SYSTEM. SUPPLY FAN NO. 3 IN BUILDING NO. 26 DUCT MOUNTED COIL (HOT WATER OR STEAM COIL) DAMPER,TWO POSITION FOHX FUEL OIL HEAT EXCHANGER PASCAL RISER CLAMP (TYPE 42)\* TEMPERATURE SWITCH, LOW (FREEZESTAT) FPM FEET PER MINUTE ACCESS DOOR PUMPED CONDENSATE MOUNT ROOM THERMOSTATS AND OTHER CONTROL DEVICES AT 48-INCHES ABOVE AFTER FILTER FPS FEET PER SECOND TYPICAL UNIT NO. FINISHED FLOOR, UNLESS OTHERWISE INDICATED. PCF POUNDS PER CUBIC FOOT (FEET) WALL BRACKET (TYPE 31, 32, 33)\* DUCT MOUNTED COIL AIR FLOW CONTROL VALVE FPTU FAN POWERED TERMINAL UNIT TEMPERATURE SWITCH, HIGH (FREEZESTAT) PD PRESSURE DROP (ELECTRIC FLOOR REGISTER ABOVE FINISHED FLOOR PEF PROPELLER (TYPE) EXHAUST FAN 9. ALL PLENUM BOXES, DUCTWORK ETC TO BE LOCATED INSIDE WALL CAVITIES OR CONSTANT SUPPORT HANGER (TYPE 54, 55, 56)\* FRP FIBER REINFORCED POLYESTER AIR FLOW MEASURING DEVICE BUILDING NO. WHERE EQUIPMENT IS LOCATED LEVEL CONTROLLER INACCESSIBLE SPACES SHALL BE TESTED FOR AIRTIGHT CONSTRUCTION BEFORE PRE-FILTER FS FLOW SWITCH AFW AIR FOIL WHEEL (FAN) CONVECTOR OR RADIATOR (RECESSED) INSTALLATION (TYPICAL). PG PRESSURE GAGE SLIDING SUPPORTS (TYPE 35)\* ITEM (TERMINAL UNIT SHOWN) **FSTAT FREEZESTAT** AHU AIR-HANDLING UNIT PGW PROPYLENE GLYCOL-WATER (SOLUTION) LEVEL TRANSMITTER AMPERGE TYPE NUMBERS REFER TO MANUFACTURER'S STANDARDIZATION 30. ALL PIPING TO BE LOCATED INSIDE WALL CAVITIES OR INACCESSIBLE SPACES SHALL BE PHC PREHEAT COIL FEET ACCESS PANEL 26-TU-I-I TEM NUMBER (TERMINAL UNIT NO. 1) LEAK TESTED AND INSULATED WITH VAPOR BARRIER SEAL BEFORE INSTALLATION PPM PARTS PER MILLION SOCIETY STANDARD PRACTICE SP-58 FT-LB FOOT-POUND CONVECTOR OR RADIATOR (WALL HUNG) PRESSURE SWITCH HIGH AIR PRESSURE DROP PRS PRESSURE REGULATING (VALVE) STATION FTR FIN TUBE RADIATION SERVED BY AIR HANDLER UNIT NO. 1 AIR CONDITIONING AND PRV PRESSURE REGULATING VALVE DIRECTION OF PIPE PITCH (DOWN) FV FACE VELOCITY REFRIGERATION INSTITUTE 31. INSTALL AUTOMATIC AIR VENTS AT ALL HIGH POINTS OF HYDRONIC PIPING. PSI POUNDS PER SQUARE INCH PRESSURE SWITCH LOW ] UP  $\supset \subset$  DN SUPPLY DUCT (UP & DOWN) FLOOR MOUNTED VERTICAL RECESSED FAN COIL AIR SEPARATOR DIRECTION OF FLOW PSIA POUNDS PER SQUARE INCH - ABSOLUTE AMERICAN SOCIETY OF MECHANICAL UNIT. LETTER INDICATES UNIT SIZE. GAL GALLONS PSIG POUNDS PER SQUARE INCH - GAGE PROVIDE ALL REQUIRED PERMITS, INSPECTIONS AND COORDINATION WITH GOVERNING EXHAUST DUCT (UP & DOWN) **ELECTRONIC TO PNEUMATIC TRANSDUCER** ANCHOR AUTHORITIES, INSTALLATION TO CONFORM WITH CURRENT APPLICABLE PROVISIONS OF GH GRAVITY HOOD PSS PRIMARY SECONDARY SYSTEM AIR WASHER 2012 INTERNATIONAL BUILDING CODE PSV PRESSURE SAFETY VALVE GPD GALLONS PER DAY **RETURN DUCT (UP & DOWN)** REDUCER OR INCREASER UP DN FLOOR MOUNTED VERTICAL CABINET FAN COIL UNIT. **AXIAL FLOW** 2012 INTERNATIONAL MECHANICAL CODE GPH GALLONS PER HOUR PTAC PACKAGED TERMINAL AIR CONDITIONER CARBON DIOXIDE TRANSMITTER LETTER INDICATES UNIT SIZE. ECCENTRIC REDUCER 2012 INTERNATIONAL PLUMBING CODE GPM GALLONS PER MINUTE R/E RETURN OR EXHAUST GPR GAS PRESSURE REGULATOR TOP CONNECTION, 45t OR 90t **BUTTERFLY DAMPER** ARBON MONOXIDE TRANSMITTER RA RETURN AIR 33. ALL PIPING TO BE FLEXIBLE CONNECTED TO EQUIPMENT GS GALVANIZED STEEL **ROUND AND SQUARE 4-WAY CEILING** BACKDRAFT DAMPER RAD REFRIGERANT AIR DRYER THRU WALL AIR CONDITIONING UNIT. **BOTTOM CONNECTION, 45t OR 90t** BASE BOARD RADIATOR RAF RADIO FREQUENCY LETTER INDICATES UNIT SIZE. NOT ALL SYMBOLS, ABBREVIATIONS AND NOTES MAY BE USED FOR THIS PROJECT. HUMIDIFER OCCUPANCY SENSOR BACKFLOW PREVENTER RAHX ROTARY AIR HEAT EXCHANGER SIDE CONNECTION **H&CW HOT & COLD WATER BOILER PLANT FIRE TUBE** RAT RETURN AIR TEMPERATURE INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S HAC HOUSEKEEPING AID CLOSET BOTTOM GRILLE LOCAL TEMPERATURE CONTROL PANEL RCCH REMOTE CONDENSER CHILLER WINDOW TYPE AIR CONDITIONING **CAPPED OUTLET** RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE OR WHERE LOCAL HB HOSE BIBB BRAKE HORSEPOWER RCU RECIPROCATING CHILLER UNIT CODES OR REGULATIONS TAKE PRECEDENCE. UNIT. LETTER INDICATES UNIT SIZE. HEATING COIL HOT WATER HEATING BOILER RISE OR DROP IN PIPE RD REFRIGERANT DISCHARGE **HVAC CONTROL PANEL SQUARE 3-WAY CEILING DIFFUSERS** HD HEAD **BOILER BLOWDOWN HEAT EXCHANGER** RDS ROOM DATA SHEETS PROVIDE ACCESS DOORS OR PANELS FOR ALL EQUIPMENT, VALVES, AND ALL OTHER HOOD BACKWARD INCLINED WHEEL (FAN) UNION ITEMS LOCATED IN OTHERWISE INACCESSIBLE LOCATION WHICH REQUIRED ROUTINE REA RELIEF AIR HOA HAND/OFF/AUTOMATIC VARIABLE SPEED MOTOR CONTROLLER FLOOR MOUNTED HEAT PUMP. LETTER **BONE MARROW TRANSPLANT** RETURN FAN ADJUSTMENT OR SERVICING. PROVIDE ACCESS LARGE ENOUGH TO ADEQUATELY PIPE UP HP HEAT PUMP BOTTOM REGISTER INDICATES UNIT SIZE. RG RETURN GRILLE PERMIT MAINTENANCE AND INSPECTION OF THE DEVICE. INTEGRATE CONTROL POINT ON REMOTE GRAPHICS WORKSTATION AT HP HORSEPOWER **SQUARE 2-WAY CEILING DIFFUSERS** PIPE DOWN **BIOLOGICAL SAFETY CABINETS** RH RELATIVE HUMIDITY HPDT HIGH PRESSURE DRIP TRAF **ENERGY CONTROL CENTER** SLOWOFF TANK CONTRACTOR TO INCLUDE ALL OFFSETS AND TRANSITIONS OF DUCTWORK AND PIPING RHC REHEAT COIL INVERTED BUCKET TRAP SET INCLUDING HPR HIGH PRESSURE RETURN BLOWOFF TANK CONTROL VALVE AIR CURTAIN RHG REFRIGERANT HOT GAS FOR PROPER FUNCTION OF THESE SYSTEMS WHETHER OR NOT SHOWN IN DRAWINGS. PIPING ACCESSORIES SEE DETAIL (STEAM CONDENSATE) **BRITISH THERMAL UNIT** BTU **SQUARE 1-WAY CEILING DIFFUSERS** TEMPERATURE CONTROLLER. SEE SEQUENCE OF OPERATION REFRIGERANT LIQUID LINE HPS HIGH PRESSURE SUPPLY BRITISH THERMAL UNIT PER HOUR FLOAT & THERMOSTATIC TRAP SET INCLUDING RLA RUN LOAD AMPERE VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS PIPING ACCESSORIES SEE DETAIL (STEAM) **BOILER PLANT WATER TUBE** UNIT HEATER (HORIZONTAL) RO REVERSE OSMOSIS PROVIDE TRANSITION FOR FINAL CONNECTION TO EQUIPMENT. HRC HEAT RECOVERY COIL LINEAR SLOT DIFFUSER PRESSURE CONTROLLER. SEE SEQUENCE OF OPERATION RPM REVOLUTIONS PER MINUTE THERMOSTATIC TRAP SET INCLUDING CENTIGRADE (CELCIUS) HRD HEAT RECOVERY DEVICE FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF WORK. RR RETURN REGISTER PIPING ACCESSORIES SEE DETAIL COOLING COIL HRP HYDRONIC RADIANT (CEILING) SUPPLY TOP REGISTER OR RS REFRIGERANT SUCTION CCD COOLING COIL CONDENSATE SPEED CONTROLLER. SEE SEQUENCE OF OPERATION GRILLE (WALL TYPE) THERMOMETER 40. PAINT INSIDE OF ALL DUCTWORK VISIBLE THROUGH DIFFUSERS, GRILLES, AND RTU ROOF TOP UNIT UNIT HEATER (VERTICAL) HRW HEAT RECOVERY WHEE RV RELIEF VALVE REGISTERS FLAT BLACK. **CEILING DIFFUSER** EXHAUST OR RETURN CEILING HSTAT HUMIDISTAT FLOW CONTROLLER. SEE SEQUENCE OF OPERATION Ø-PRESSURE GAGE CD-1 CONSTRUCTION DOCUMENTS HTM HUMIDIFIER TERMINAL REGISTER OR GRILLE DUCT SYSTEMS SHALL BE BALANCED TO QUANTITIES SHOWN ON THE DRAWINGS. SUBMISSION1) HUM HUMIDIFIER UNIT MOUNTED EXHAUST OR RETURN BOTTOM REGISTER SAD SOUND ATTENUATING DEVICE HVU HEATING AND VENTILATING UNIT FLOW ELEMENT FLOW SWITCH HIGH 2'x2' RADIANT CEILING PANEL SAT SUPPLY AIR TEMPERATURE CONSTRUCTION DOCUMENTS OR GRILLE (WALL TYPE) HW HOT WATER SC SHADING COEFFICIENT SUBMISSION2) **EXHAUST OR RETURN REGISTER OR TOP** REFRIGERANT SIGHT GLASS HWC HOT WATER COIL SCFM STANDARD CUBIC FEET PER MINUTE CENTRIFICAL FLOW SWITCH LOW GENERAL CONDITION 2'x4' RADIANT CEILING PANEL HWHC HOT WATER HEATING COIL **GRILLE (WALL TYPE)** SCI SPINAL CODE INJURY **CUBIC FEET PER HOUR** HWP HEATING HOT WATER PUMP SCR SILICON CONTROLLED RECTIFIER TEST PLUG (PRESSURE/TEMPERATURE) CUBIC FEET PER MINUTE TIME CLOCK CONTROLLING EQUIPMENT ON A SCHEDULE HWR HEATING HOT WATER RETUR **VANED ELBOW & AIR SPLIT TYPE** SD SMOKE DETECTOR CUBIC FEET TERMINAL UNIT WITH REHEAT COIL HWS HEATING HOT WATER SUPPLY ALL WORK TO BE IN ACCORDANCE WITH REQUIREMENTS OF GOVERNING LOCAL FIRE DUCT TAKE-OFF SD SUPPLY AIR DIFFUSER CFP CHEMICAL FEED PUMP TEMPERATURE SENSING ELEMENT FOR HWUH HOT WATER UNIT HEATER AUTOMATIC AIR VENT CODES AND BUILDING CODES. SD-1 SCHEMATIC DESIGN (SUBMISSION1) CEILING GRILLE TRANSMITTING TEMPERATURE TO EMCS SD-2 SCHEMATIC DESIGN (SUBMISSION2) DOUBLE DUCT MIXING BOX (PROVIDE 12 INCHES [200mm] MINIMUM HX HEAT EXCHANGER . VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT OF ANY CHILLED WATER PUMP MANUAL AIR VENT DISCREPANCIES FOUND. VERIFY DIMENSIONS OF ALL OWNER FURNISHED OPERATING HZ HERTZ CONNECT NEW DUCT TO EXISTING DUCT LENGTH IN DUCT WHEN SPACE PERMITS.) SDR SMOKE DAMPER (RETURN) CHILLER WATER FAN POWERED VARIABLE VOLUME EQUIPMENT TO ENSURE PROPER COORDINATION WITH CONSTRUCTION. SDS SMOKE DAMPER (SUPPL) SENSOR WITH AVERAGING ELEMENT TO TRANSMIT CHILLED WATER RETURI I/O INPUT/OUTPUT QUICK-COUPLE HOSE CONNECTOR TERMINAL UNIT WITH HEATING COIL. \_\_\_ SEN SENSIBLE HEAT TEMPERATURE TO EMCS CHILLED WATER SUPPLY IAQ INDOOR AIR QUALITY SCHEDULE ALL WORK ACCESS AND STORAGE WITH THE FACILITY ADMINISTRATOR. ##-R SF SUPPLY FAN GATE VALVE - THREADED/FLANGED INCLINED RISE, IN DIRECTION OF AIR FLOW  $-\!\!\bowtie$ CAST IRON HPS-HIGH PRESSURE STEAM (60 PSIG AND ABOVE) INVERTED BUCKET TRAP SG SUPPLY AIR GRILLE CARBON MONOXIDE CONTRACTOR SHALL PROVIDE DUST COVERS AS REQUIRED TO CONTAIN DUST AND ICF IN-LINE CENTRIFUGAL FAN SH STEAM HUMIDIFIER CUBIC METER ICU INTENSIVE CARE UNIT ELECTRIC OPERATED CONTROL DAMPER/OR VALVE ##**-**D HIGH PRESSURE STEAM CONDENSATE RETURN DEBRIS WITHIN CONSTRUCTION AREA AND KEEP DIRT AND DUST TO A MINIMUM. INCLINED DROP, IN DIRECTION OF AIR FLOW **CUBIC METER PER SECOND** SHC STEAM HEATING COIL **GATE VALVE WITH 3/4" HOSE ADAPTER** ID INSIDE DIAMETER SQUARE INCHES ALL REMOVED ITEMS DEEMED TO HAVE VALUE BY THE OWNER SHALL BE DELIVERED TO IFB INTEGRAL FACE AND BYPASS **CHECK VALVE** MEDIUM PRESSURE STEAM (16 PSIG TO 59 PSIG) STATIC PRESSURE GENERAL NOTES CARBON DIOXODE A PLACE OF STORAGE AT THE SITE AS DIRECTED. ALL OTHER ITEMS MUST BE DISPOSED SP GR SPECIFIC GRAVITY COMPRESSOR UNI LIMIT OF DEMOLITION OF OFF SITE IN A LEGAL MANNER. IN HG INCHES OF MERCURY WYE STRAINER (WITH BALL VALVE & HOSE CONN.) SPD SUPPLY PROCESS AND DISTRIBUTION MEDIUM PRESSURE STEAM CONDENSATE RETURN COEFFICIENT OF PERFORMANCE COP IN WC INCH WATER COLUMN ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. SPRV STEAM PRESSURE REDUCING VALVE CONDENSATE PUMP WHERE EXISTING CONSTRUCTION IS CUT, DAMAGED, OR REMODELED, PATCH WITH IN WG INCH WATER GAUGE SPS STATIC PRESSURE SENSOR WYE STRAINER WITH VALVED DRAIN AND QUICK-**CEILING REGISTER** LOW PRESSURE STEAM (15 PSIG AND BELOW) FLEXIBLE CONNECTION, EQUIPMENT, MATERIALS TO MATCH IN KIND, QUALITY AND PERFORMANCE. IN-LB INCH-POUND IN THE EVENT OF A DISCREPANCY BETWEEN CONTRACT DRAWINGS AND SQ FT SQUARE FOOT (FEET) COUPLE HOSE CONNECTOR CONDENSATE STORAGE TANK IPLV INTERGRATED PART LOAD VALUE SPECIFICATIONS, THE MOST STRINGENT SHALL GOVERN. VIBRATION, OR SEISMIC LOW PRESSURE STEAM CONDENSATE RETURN SR SUPPLY AIR REGISTER CLEAN STEAM GENERATOR - -LPR-CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR SAFETY OF ALL PERSONS ON IRH INTRARED HEATER FLEXIBLE CONNECTION SS STAINLESS STEEL COOLING TOWER OR ABOUT THE CONSTRUCTION SITE IN ACCORDANCE WITH APPLICABLE LAWS AND INSECT SCREEN VANED ELBOW (PROVIDE ALL SQUARE OR INSTALL ALL PIPING AND DUCTWORK TO AVOID ARCHITECTURAL FRAMING, STRUCTURA SSHX STEAM TO STEAM HEAT EXCHANGER CONDENSATE PUMP DISCHARGE CONDENSING UNIT CODES. GUARD ALL HAZARDS IN ACCORDANCE WITH THE SAFETY PROVISIONS OF THE INDUCTION UNIT MEMBERS, AND OTHER OBSTRUCTIONS. COORDINATE PIPING AND DUCTWORK SSR SOLID SEPARATOR RECTANGULAR ELBOWS WITH VANES EVEN IF ANGLE GLOBE VALVE CABINET UNIT HEATER LATEST MANUAL OF ACCIDENT PREVENTION PUBLISHED BY THE ASSOCIATED GENERAL INLET VANES LOCATION WITH ALL APPLICABLE CONTRACT DRAWINGS PRIOR TO PLACING SLEEVES IF ST STEAM TRAP SYMBOL IS MISSING) CONSTANT VOLUME HOT WATER HEATING SUPPLY CONTRACTORS OF AMERICA. FLOORS OR WALLS. -SUH STEAM UNIT HEATER **BUTTERFLY VALVE** INTENTIALLY LEFT BLANK COLD WATER (POTABLE) SV STEAM PRESSURE REDUCING VALVE HOT WATER HEATING RETURN CHILLED WATER COOLING COIL kg KILOGRAM 3. CLEAN ALL EXPOSED SURFACES AND NEW EQUIPMENT AFTER COMPLETION. VANED ELBOW (SHORT RADIUS) BALL VALVE INSTALL ALL PIPING AND DUCTWORK TO BEST SUIT FIELD CONDITIONS AND  $-\omega$ CONDENSER WATER PUMP SVS STEAM VENT SILENCER kg/HR KILOGRAM PER HOUR COORDINATE WITH THE INSTALLATION WORK OF OTHER TRADES. THE DRAWINGS ARE SWHX STEAM TO WATER HEAT EXCHANGER GLYCOL-WATER HEATING SUPPLY CONDENSER WATER RETURN kPa KILOPASCAL WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING DIAGRAMMATIC AND SHALL NOT BE SCALED TO DETERMINE EXACT LOCATIONS OF MODULATING CONTROL VALVE - $\bowtie$ -**CWS** CONDENSER WATER SUPPLY KILOWATT NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID **GLYCOL-WATER HEATING RETURN DAMPER - AUTOMATIC** kWh KILOWATT HOUR T & PCV TEMPERATURE AND PRESSURE CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A MINIMUM STANDARD RADIUS ELBOW (LONG RADIUS) OUTDOOR AIR DAMPE CONTROL VALVE MODULATING CONTROL BUTTERFLY VALVE CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN —//⊢ SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT DIFFUSER LOCATIONS SOLAR WATER SUPPLY RETURN AIR DAMPER LITERS PER HOUR (OR LITERS/HOUR) TESTING, ADJUSTING, BALANCE ANCHOR AND/OR PIN. AND FINISHED CEILING. RELIEF AIR DAMPER LITERS PER MINUTE (OR LITERS/MINUTE) TEMPERATURE DIFFERENCE SOLAR WATER RETURN TWO POSITION CONTROL VALVE NEW DUCT (INSIDE DIM: WIDTH x DEPTH) LITERS PER SECOND (OR LITERS/SECOND) TOTAL DYNAMIC HEAD 10. HANG AND BRACE ALL UTILITIES PER SPEC 130451. COORDINATE DUCTWORK, PIPING WITH STRUCTURAL DRAWINGS, LIGHTING AND DRY-BULB TEMPERATURE LEAVING AIR TEMPERATURE TOTAL DISSOLVED SOLIDS REFRIGERANT LIQUID SPRINKLER SYSTEM. PROVIDE TRANSITIONS AS REQUIRED. DD-1 DESIGN DEVELOPMENT -THREE-WAY MODULATING CONTROL VALVE LBS/HR POUNDS PER HOUR TRAP EXISTING DUCT TO REMAIN LINEAR FOOT (FEET) REFRIGERANT SUCTION CONTRACTOR TO COORDINATE WITH ARCHITECTS CEILING ACCESS PANELS FOR ALL DESIGN DEVELOPMENT LGT LEAVING GLYCOL TEMPERATURE TOP REGISTER FIRE, SMOKE AND VOLUME DAMPERS IN INACCESSIBLE CEILING AS REQUIRED. REFRIGERANT HOT GAS TOTAL STATIC PRESSURE IH I ATENT HEAT - $\bowtie$ -THREE-WAY TWO POSITION CONTROL VALVE **MECHANICAL SHEET INDEX - TC** DIRECT DIGITAL CONTROLS LPG LIQUID PROPANE GAS EXISTING DUCT TO BE REMOVED ALL DUCT DIMENSIONS ARE AIRSTREAM DIMENSIONS. CONDENSER WATER SUPPLY (FROM TOWER) DEG LPR LOW PRESSURE RETURN (STEAM CONDENSATE) TU TERMINAL UNIT DIFFUSER TWU THRU-WALL UNIT Sheet LPRC LOW PRESSURE STEAM RETURN (CLEAN) CONDENSER WATER RETURN (TO TOWER) 9. REFER TO SPECIFICATION, DIVISION I FOR ADDITIONAL PROVISIONS REQUIRED UNDER PRESSURE REGULATING VALVE LOUVER (LOUVER SPECIFIED IN <u>-</u>V₩1-DIAMETER LLHX LIQUID TO LIQUID HEAT EXCHANGER Number Sheet Name UC UNDER CUT DEIONIZED WATER ARCHITECTURAL SECTION.) LPS LOW PRESSURE STEAM -CHS-CHILLED WATER SUPPLY UC UNIT COOLER DEW POINT TEMPERATURE LPSC LOW PRESSURE STEAM (CLEAN) UH UNIT HEATER SEAL ALL FIRE RATED PENETRATIONS WITH FIRE RETARDANT MATERIAL AS SPECIFIED. PRESSURE SAFETY VALVE -CHR CHILLED WATER RETURN 334TC MH001 | MECHANICAL LEGEND ABBREVIATIONS AND GENERAL NOTES DIFFUSER PLATE LSD LINEAR SLOT DIFFUSER UL UNDERWRITERS LABORATORY 000000 FLEXIBLE DUCTWORK (INSULATED) DPA DIFFERENTIAL PRESSURE ASSEMBLY LTCP LOCAL TEMPERATURE CONTROL PANEL PROVIDE REMOTE OPERATORS FOR ALL VOLUME DAMPERS LOCATED ABOVE URV UPBLAST UNIT VENTILATOR -GCS-CHILLED GLYCOL-WATER SUPPLY 100000 DIFFERENTIAL PRESSURE SENSOR 334TC MD201 MECHANICAL DEMO PLAN - TRAINING CENTER LVG LEAVING -AUTOMATIC BALANCING CONTROL VALVE INACCESSIBLE CEILING. DIRECT EXPANSION LOUVER CHILLED GLYCOL-WATER RETURN 334TC MH201 MECHANICAL FLOOR PLAN - TRAINING CENTER -GCR-DIRECT EXPANSION COOLING COIL LWT LEAVING WATER TEMPERATURE DUCT WITH SOUND LINING WATER BALANCE DEVICE 12. PROVIDE OPERATING HANDLES FOR ALL VALVE AND COCKS WITHOUT INTEGRAL VAF VANE-AXIAL FAN  $-\infty$ MAKE-UP WATER VAV VARIABLE AIR VOLUME METER, SI UNIT VD VOLUME DAMPER (MANUAL OPPOSED BLADE) DRAIN LINE CIRCUIT SETTER VALVE EAT ENTERING AIR TEMPERATURE M/s METERS PER SECOND 13. PROVIDE VALVES AND OTHER PIPING SPECIALTIES SAME SIZE AS LINE SIZE SHOWN VFD VARIABLE FREQUENCY DRIVE MANUAL VOLUME DAMPER EC EVAPORATIVE COOLER (OR METERS/SECOND) **VENT LINE** UNLESS OTHERWISE NOTED. VHA VETERANS HEALTH ADMINISTRATION MA MIXED AIR ECC ENGINEERING CONTROL CENTER GATE VALVE WITH GLOBE-VALVED BYPASS VIBRATION ISOLATOR MAT MIXED AIR TEMPERATURE ECU EVAPORATIVE CONDENSER UNIT GLYCOL-WATER RUN AROUND SUPPLY INSTALL SWING CHECK VALVES IN THE HORIZONTAL POSITION. VIV VARIABLE INLET VANES EDH ELECTRIC DUCT HEATER MAU MAKE-UP AIR UNIT GLYCOL-WATER RUN AROUND RETURN VP VACUUM PUMP FIRE DAMPER MAV MANUAL AIR VENT EER ENERGY EFFICIENCY RATIO 15. PROVIDE 3/8" BLOW-OFF VALVE AND 1/2" IPS TO HOSE THREAD ADAPTER ON ALL VPS VARIABLE PRIMARY SYSTEM MAX MAXIMUM EXISTING PIPE TO BE REMOVED EF EXHAUST FAN CONTROL VALVE (CV) - FLOAT-OPERATED VR VACUUM (STEAM CONDENSATE) RETURN MB MIXING BOX EG EXHAUST GRILLE FEEDWATER PUMP DISCHARGE VSD VARIABLE SPEED DRIVE MBH 1000 BTUH EGS EMERGENCY GAS SHUTOFF BACK DRAFT DAMPER PRESSURE REDUCING VALVE (PRV) 16. ALL BRANCH DUCTS TO AIR OUTLET SHALL BE EQUIPPED WITH DUCT VOLUME DAMPER VUH VERTICAL UNIT HEATER MCA MINIMUM BRANCH CIRCUIT AMPACITY FEEDWATER PUMP SUCTION EGT ENTERING GLYCOL TEMPERATURE MER MECHANICAL EQUIPMENT ROOM W WATTS EH EXHAUST HOOD F/S DPR — WATER LEVEL CONTROLLER CONDENSATE TRANSFER PUMP DISCHARGE PROVIDE UNIONS OR FLANGES ON EACH SIDE OF CONTROL VALVES. EVERY PIPING MERV MINIMUM EFFICIENCY REPORTING WAG WASTE ANETHESIA GAS EJ EXPANSION JOINT ASSEMBLY SHALL BE MADE SO AS TO MAKE EVERY VALVE AND PIECE OF EQUIPMENT Wb WET-BULB (TEMPERATURE) EMD END OF MAIN DRIP (STEAM) COMBINATION FIRE/SMOKE DAMPER CONDENSATE TRANSFER PUMP SUCTION FLOW METER EASILY REMOVABLE. WELDED OR SOLDER-JOINT VALVES ARE EXCEPTED FROM THIS MH MANHOLE WC WATER COOLED VACUUM CONDENSATE RETURN REQUIREMENT. MHP MOTOR HORSEPOWER WCCH WATER COOLED CHILLER ER EXHAUST REGISTEI ROOM THERMOSTAT/TRANSMITTER - WALL MOUNT MIN MINIMUM WCCU WATER COOLED CONDENSING UNIT ERC ELECTRIC REHEAT COIL **TUBE CLEANER WATER SUPPLY** CEILING DIFFUSER SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES. MM MILLIMETER WCHP WATER COOLED HEAT PUMPS ERP ELECTRIC RADIANT PANE POINT OF CHANGE IN DUCT CONSTRUCTION BY **BOILER BLOWOFF** MOV MOTOR OPERATED VALVE ROOM HUMIDISTAT/TRANSMITTER - WALL MOUNT WCPU WATER COOLED PACKAGED UNIT ESP EXTERNAL STATIC PRESSURE STATIC PRESSURE CLASS. THE NUMBER ASSIGNS 19. SEPARATE ALL CEILING HANGING AND BRACING WIRES AT LEAST 6" FROM ALL MPR MEDIUM PRESSURE RETUR WEF WALL EXHAUST FAN ET EXPANSION TANK PRESSURE CLASS (IN. OF WATER) WHICH WILL CBD CONTINUOUS BLOWDOWN UNBRACED DUCTS, PIPES, CONDUITS, ETC. AT THE CONTRACTOR'S OPTION HE MAY (STEAM CONDENSATE ETO ETHYLENE OXIDE WATER FILTER ACCOMMODATE MAXIMUM OPERATING PRESSURE BRACE UNBRACED DUCTS, PIPES, CONDUITS, ETC, IN A MANNER CONFORMING TO TEMPERATURE TRANSMITTER MPS MEDIUM PRESSURE STEAM WIFCV WEATER FLOW CONTROL VALVE **BOILER WATER SAMPLE** EUH ELECTRIC UNIT HEATER IN THE DUCT SUBSECTION. THE SYMBOL CONT. REQUIREMENTS ESTABLISHED BY THE MECHANICAL AND ELECTRICAL CONTRACT MRI MAGNETIC RESONANCE IMAGINO WFM WATER FLOWMETER EWC EVAPORATIVE WATER COOLER THE ASSIGNMENT UNTIL THE DUCT TERMINATES DOCUMENTS, OR THE CONTRACTOR MAY INSTALL TRAPEZE SUPPORTS TO RECEIVE THE MTD MEAN TEMPERATURE DIFFERENCE WFMD WATER FLOW MEASURING DEVICE FEEDWATER SAMPLE (FROM DEAERATOR) **EWT ENTERING WATER TEMPERATURE** OR ANOTHER SYMBOL APPEARS, A "N" TEMPERATURE TRANSMITTER, AVERAGING ELEMENT CEILING HANGING AND BRACING WIRES. THE GENERAL CONTRACTOR SHALL MVD MANUAL VOLUME DAMPER WG WATER GAGE EX. EXISTING SUPERSCRIPT INDICATES NEGATIVE PRESSURE. **CHEMICAL FEED** COORDINATE THE WORK AND RESPONSIBILITY FOR ACCOMMODATING SUCH WORK. WPD WATER SIDE PRESSURE DROP MZ MULTI-ZONE MOISTURE (HUMIDITY) TRANSMITTER OVERFLOW PROVIDE BALANCING DAMPERS AT EACH SUPPLY, RETURN, AND EXHAUST BRANCH F&T FLOAT AND THERMOSTATIC NA NOT APPLICABLE AUTOMATIC CONTROL DAMPER MODULATING F/SDPR COMBINATION FIRE SMOKE PRESSURE TRANSMITTER NC NOISE CRITERIA NC NORMALLY CLOSED NATURAL GAS MAIN FUEL 21. DUCTS STORED ON THE CONSTRUCTION SITE SHALL BE PROTECTED AND ISOLATED FREE AREA NG NATURAL GAS STATIC PRESSURE SENSOR FROM DUST CONTAMINATION. AUTOMATIC CONTROL DAMPER TWO POSITION NATURAL GAS IGNITER FUEL FLEXIBLE CONNECTION NGFM NATURAL GAS FLOWMETER FCU FAN COIL UNIT (4 PIPE) NO NORMALLY OPEN LIQUEFIED PETROLEUM GAS IGNITER FUEL FLOW TRANSMITTER 22. BE RESPONSIBLE FOR ALL CUTTING AND PATCHING NECESSARY FOR THE COMPLETION FUEL OIL SUPPLY STAINLESS STEEL DUCT CURRENT TRANSMITTER -FOR-**FUEL OIL RETURN** COLD WATER (CITY WATER) CONDUCTIVITY TRANSMITTER MANUAL SPLITTER DAMPER SOFTENED WATER SMOKE DETECTOR **HOT WATER** 100% CD/BID SUBMISSION FEBRUARY 2, 2016 65% CD SUBMISSION Drawing Title **ARCHITECT** 

100% CD/BID SUBMISSION

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Project Title Project Number MECHANICAL LEGEND ABBREVIATIONS AND GENERAL NOTES POST TRAUMATIC STRESS DIAGNOSIS (PTSD) 612-125 TRAINING CENTER EXPANSION AND RENOVATION **Building Number** Building 334 **Drawing Number** Approved: Project Director Location 795 WILLOW ROAD, MENLO PARK, CA Checked 334TC MH00 01/05/16 Author Checker

Office of Construction and Facilities Management

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